

IN THE CLAIMS

Claims 1-29 (Cancelled).

30. (Currently Amended) An information receiving/display apparatus configured to receive ~~visual information and another sensory information other than visual information and audio information, in addition to visual information and/or audio information or in addition to visual information and audio information~~ one of audio information and visual information and to receive one of olfactory information, gustatory information, and tactile information, comprising:

- an information display plane, wherein the information display plane presents the information; ~~wherein said information display plane comprises:~~
 - a plurality of optical fibers or optical waveguides having liquid cores for visual information;
 - a plurality of fibers for information for another sensory information having liquid cores;
 - a plurality of first control signal lines for visual information extending across said optical fibers or optical waveguides; ~~and~~
 - a plurality of second control signal lines for said another sensory information extending across said fibers[[],];
 - first piezoelectric elements on outer circumferential surfaces of said optical fibers or optical waveguides at intersections between said optical fibers or optical waveguides and said first control signal lines[[],]; and
 - second piezoelectric elements on outer circumferential surfaces of said fibers at intersections between said fibers and said second control signal lines,
- wherein the information display plane is configured to display image information by scattering light introduced into said cores from one end or opposite ends of selected one of said optical fibers or waveguides selected in response to image information to be displayed, by means of bubbles that are generated by cavitation brought about in a liquid forming said core by propagating ultrasonic waves from the outer circumferential surface of said optical fiber or optical waveguide by driving said first piezoelectric element at the intersection between selected said optical fiber or optical waveguide and one of said first control signal lines selected in response to said image information to be displayed, and leading out the scattered light externally, and

wherein the information display plane is configured to form a projection or produce a temperature change on a surface of one of said fibers selected in response to said image information to be displayed, by propagating ultrasonic waves from the outer circumferential surface of selected said fiber by driving one of said second piezoelectric elements at the intersection between selected said fiber and one of one of said second control signal lines selected in response to said image information to be displayed, and/or, said liquid forming said liquid core or molecules of a substance contained in said liquid being emanated from the surface of one of said fibers selected in response to said image information to be displayed.

31. (Original) The information receiving/display apparatus according to claim 30 wherein one of said piezoelectric elements at the intersection between selected said fiber and selected said second control signal line is driven to propagate ultrasonic waves from the outer circumferential surface of said fiber and thereby bring about cavitation and generate bubbles in said liquid forming said core, such that a projection is made as representation of tactual information on the surface of said fiber due to a pressure of bubbles.

32. (Original) The information receiving/display apparatus according to claim 30 wherein one of said piezoelectric elements at the intersection between selected said fiber and selected said second control signal line to propagate ultrasonic waves from the outer circumferential surface of said fiber to increase the temperature of said liquid forming the core as representation of relative surface temperature information.

33. (Original) The information receiving/display apparatus according to claim 30 wherein one of said piezoelectric elements at the intersection between selected said fiber and selected said second control signal line to propagate ultrasonic waves from the outer circumferential surface of said fiber to emanate said liquid forming the core or molecules of a substance contained in said liquid as representation of relative surface humidity information or olfactory information.

34. (Original) The information receiving/display apparatus according to claim 30 wherein said optical fibers or optical waveguides have light sources at one-side ends or opposite ends thereof.

35. (Previously Presented) The information receiving/display apparatus according to claim 34 wherein each of said light sources is a semiconductor laser.

36. (Previously Presented) The information receiving/display apparatus according to claim 30, wherein said optical fibers or optical waveguides include those for red, those for green and those for blue, said optical fibers or optical waveguides for red having red emitting light sources at one-side ends or opposite ends thereof, said optical fibers or optical waveguides for green having green emitting light sources at one-side ends or opposite ends thereof, and said optical fibers or optical waveguides for blue having blue emitting light sources at one-side ends or opposite ends thereof.

37. (Original) The information receiving/display apparatus according to claim 36 wherein said red emitting light sources, said green emitting light sources and said blue emitting light sources are semiconductor lasers.

38. (Original) The information receiving/display apparatus according to claim 30 wherein said optical fibers, or optical waveguides, and said fibers are arranged to form a concave plane as a whole.

Claims 39-40 (Cancelled).

41. (Previously Presented) A method for receiving and displaying information comprising:

receiving sensory information other than visual information and audio information, in addition to visual information and/or audio information; and

presenting the information on an information display plane, wherein said information display plane comprises an optical fiber or an optical waveguide having a liquid core for visual information, and a fiber for information for another sensory information having a liquid core,

wherein the information display plane is configured to display image information by scattering light introduced into said core from one end or opposite ends of said optical fiber or

waveguide by means of light scattering elements in said core at a portion selected in response to an image to be displayed, and thereby leading out it externally,

wherein the information display plane is configured to form a projection or produce a temperature change on a surface of said fiber at a portion selected in response to image information to be displayed.

42. (Previously Presented) A display configured to receive visual information for a remotely discernible sense and tactual information for a proximately discernible sense, comprising:

an information display plane, wherein the information display plane is configured to form an image in response to the visual information and a projection in response to the tactual information.

43. (Previously Presented) The display according to claim 42 wherein the remotely discernible sense is a visual sense.

44. (Previously Presented) The display according to claim 42 wherein the proximately discernible sense is a tactual sense.

45. (Previously Presented) The display according to claim 42 wherein information of sound, surface roughness, relative surface temperature or relative surface humidity is represented on said information display plane.

46. (Previously Presented) The display according to claim 42 wherein the tactual information can be obtained from both the front and the back of said information display plane.

47. (Previously Presented) The display according to claim 42 wherein the information display plane comprises an optical fiber or an optical waveguide having a liquid core.

48. (Previously Presented) The display according to claim 47 wherein the information display plane forms an image by scattering light introduced into said liquid core using a light scattering element at a selected portion of the optical fiber.

49. (Previously Presented) The display according to claim 47 wherein the information display plane comprises a fiber for tactual representation having a liquid core and a cavitation forming element at a selected portion of the fiber, wherein the cavitation forming element is capable of being driven to bring about cavitation and generate bubbles in the liquid core of the fiber in order to form a projection on the surface of said fiber representing the tactual information.

50. (Previously Presented) A display configured to receive visual information for a remotely discernible sense and olfactory information for a proximately discernible sense, comprising:

an information display plane, wherein the information display plane is configured to form an image in response to the visual information and emit a vapor in response to the olfactory information.

51. (Previously Presented) The display according to claim 50 wherein the remotely discernible sense is a visual sense.

52. (Previously Presented) The display according to claim 50 wherein the proximately discernible sense is a tactual sense.

53. (Previously Presented) The display according to claim 50 wherein information of sound, surface roughness, relative surface temperature or relative surface humidity is represented on said information display plane.

54. (Previously Presented) The display according to claim 50 wherein the olfactory information can be obtained from both the front and the back of said information display plane.

55. (Previously Presented) The display according to claim 50 wherein the information display plane comprises an optical fiber or an optical waveguide having a liquid core.

56. (Previously Presented) The display according to claim 50 wherein the image is formed by scattering light introduced into said liquid core by means of light scattering elements at a selected portion of the optical fiber.

57. (Previously Presented) The display according to claim 55 wherein the information display plane comprises a fiber for olfactory representation having a liquid core and a cavitation forming element at a selected portion of the fiber, wherein the cavitation forming element is capable of being driven to bring about cavitation and generate bubbles in the liquid core of the fiber in order to form and emit a vapor through the surface of said fiber representing the olfactory information.

58. (Currently Amended) An information receiving/display apparatus configured to receive one of audio information and visual information and to receive one of olfactory information, gustatory information, and tactile information, comprising:

an information display plane, wherein the information display plane displays one of the audio information and visual information and displays one of olfactory information, gustatory information, and tactile information;

a plurality of first fibers or waveguides for displaying the visual information on the information display plane;

a plurality of second fibers or waveguides for displaying one of olfactory information, gustatory information, and tactile information;

a plurality of first control signal lines extending across said first fibers or waveguides;

a plurality of second control signal lines extending across said second fibers or waveguides;

first piezoelectric elements on outer surfaces of said first fibers or waveguides at intersections between said first fibers or waveguides and said first control signal lines; and

second piezoelectric elements on outer surfaces of said second fibers or waveguides at intersections between said second fibers or waveguides and said second control signal lines.

59. (Previously Presented) The information receiving/display apparatus according to claim 58 wherein the information display plane displays the tactile information by forming a projection on the display plane.

60. (Previously Presented) The information receiving/display apparatus according to claim 58 wherein the information display plane displays the olfactory information by releasing vapor from the display plane.

61. (Previously Presented) An information receiving/display apparatus configured to receive one of audio information, visual information, olfactory information, gustatory information, and tactile information, comprising:

an information display plane, wherein the information display plane displays one of the audio information and visual information and releases vapor from the display plane in response to one of the audio information, the visual information, the olfactory information, the gustatory information, and the tactile information.

62. (Previously Presented) An information receiving/display apparatus configured to receive one of audio information, visual information, olfactory information, gustatory information, and tactile information, comprising:

an information display plane, wherein the information display plane displays one of the audio information and visual information and forms a projection on the information display plane in response to one of the audio information, the visual information, the olfactory information, the gustatory information, and the tactile information.

63. (New) The information receiving/display apparatus according to claim 58 wherein the information display plane is configured to display visual information on one of said first fibers or waveguides by scattering light introduced into one of said first fibers or waveguides by means of bubbles that are generated by cavitation brought about in a liquid forming said core by propagating ultrasonic waves from an outer surface of one of said first fibers or waveguides by driving one of said first piezoelectric elements at the intersection between one of selected said first fibers or waveguides and one of said first control signal lines.

64. (New) The information receiving/display apparatus according to claim 64 wherein the information display plane is configured to form a projection or produce a temperature change on a surface of one of said second fibers or waveguides in response to one of

said olfactory information, gustatory information, and tactile information, by propagating ultrasonic waves from an outer surface of one of said second fibers or waveguides by driving one of said second piezoelectric elements at the intersection between one of said second fibers or waveguides and one of said second control signal lines.

65. (New) The information receiving/display apparatus according to claim 64 wherein the information display plane is configured to form a projection or produce a temperature change on a surface of one of said second fibers or waveguides by means of bubbles that are generated by cavitation brought about in a liquid forming said core by propagating ultrasonic waves from an outer surface of one of said second fibers or waveguides by driving one of said second piezoelectric elements at the intersection between one of selected said second fibers or waveguides and one of said second control signal lines.

66. (New) The information receiving/display apparatus according to claim 58 wherein a projection is formed on one of said second fibers or waveguides.

67. (New) The information receiving/display apparatus according to claim 58 wherein vapor is released from one of said second fibers or waveguides.